

## AMENDMENTS TO THE CLAIMS

**1 (currently amended)** A transmission device for transmitting data in an installation for working fluids contained ~~underground~~under ground, the installation comprising a cavity defined in an underground formation and extending ~~to from~~ the surface of the ground, ~~said cavity being provided with and~~ at least one electrically conductive tubular element having a first point at the surface of the ground and a second point within the cavity, the transmission device being of the type comprising:

a single-strand smooth cable for supporting an action and/or measurement assembly, ~~said~~the cable having a breaking strength greater than 300 daN, being made of an electrically ~~conductive~~conductive material, and being disposed in the tubular element between ~~the~~a first point at the surface of the ground and ~~the~~a second point ~~within the cavity~~, wherein ~~at the~~ surface of ~~said~~the cable is electrically insulated, at least in part, from ~~the said~~ tubular element; ~~and wherein the device further comprises~~

transmitter means for transmitting an electrical and/or electromagnetic signal, said transmitter means being electrically connected to said cable and to the tubular element and/or the underground formation, and being situated in ~~at the~~ vicinity of one or both of the first point and ~~the second point~~points; and

receiver means for receiving ~~the~~an electrical and/or electromagnetic signal, said receiver means being electrically connected to said cable and to the tubular element and/or the underground formation, and being situated in ~~at the~~ vicinity of the other one or both of the first point and ~~the second point~~points; ~~each of said transmitter means and said receiver means being electrically connected firstly to the cable and secondly to the tubular element and/or to the formation;~~

wherein said~~the~~ cable ~~is~~constituting a portion of a loop for conveying the electrical and/or electromagnetic signal between ~~said~~the transmitter means and ~~said~~the receiver means.

**2 (currently amended)** A transmission device according to claim 1, wherein ~~said~~the surface of ~~said~~the cable carries a continuous coating of insulating material and is electrically insulated from ~~the said~~ tubular element.

**3 (currently amended)** A transmission device according to claim 2, wherein ~~at the~~ thickness of ~~said the~~ continuous coating of insulating material is equal to half the difference in diameter between two standard and non-coated cables.

**4 (currently amended)** A transmission device according to claim 1, wherein ~~said the~~ surface of ~~said the~~ cable is provided at regular intervals with centralizers of insulating material for electrically insulating said cable from the tubular element.

**5 (currently amended)** A transmission device according to claim 1,  
wherein ~~said the~~ transmitter means and ~~said~~ receiver means ~~in the vicinity of the~~  
~~first and second points~~ are electrically connected to the at least one electrically  
~~conductive~~said tubular element,

wherein said surface of said cable carries a continuous coating of insulating  
material and is completely electrically insulated from the at least one electrically  
conductive tubular element, and

wherein the electrical and/or electromagnetic signal transmitted by ~~said the~~  
transmitter means and received by ~~said the~~ receiver means is an electrical signal.

**6 (currently amended)** A transmission device according to claim 1,  
wherein the at least one electrically conductive tubular element~~teavity~~ is ~~provided~~  
~~with~~ at least a first tubular element and a second tubular element disposed inside ~~said the~~  
first tubular element, and

wherein ~~said the~~ cable is disposed in ~~an the~~ annular space between ~~said the~~ first  
tubular element and said second tubular element~~elements~~.

**7 (currently amended)** A transmission device according to claim 1,  
wherein the surface of the cable has at least one electrical contact point with the at  
least one electrically conductive~~said~~ tubular element, and

wherein ~~said~~the transmitter means and/or ~~said~~ receiver means, ~~in the vicinity of the first and second points and the at least one electrically conductive~~said tubular element are electrically connected to the underground formation.

**8 (currently amended)** A transmission device according to claim 7,

wherein said transmitter means is in a vicinity of the first point,

wherein said receiver means is in a vicinity of the second point,

wherein the electrical and/or electromagnetic signal transmitted by ~~said~~the transmitter means ~~in the vicinity of the first point~~ is injected to a first dipole comprising ~~firstly~~an electrical contact point between ~~said~~the cable and ~~said~~the transmitter means ~~in the vicinity of the first point~~, and ~~secondly~~an electrical contact point between the underground formation and ~~said~~the transmitter means, ~~in the vicinity of the first point~~;

wherein the first dipole ~~generates~~generating an electromagnetic signal that is received by a second dipole comprising ~~firstly~~one of said electrical contact points between ~~said~~the cable and the at least one electrically conductive tubular element, and ~~secondly~~an electrical contact point between the at least one electrically conductive tubular element and ~~said~~the receiver means, and ~~in the vicinity of the second point~~, with the electromagnetic signal received by the

wherein the second dipole ~~generates~~generating an electrical signal which is conveyed to ~~said~~the receiver means, ~~in the vicinity of the second point~~.

**9 (currently amended)** A transmission device according to claim 7,

wherein said transmitter means is in a vicinity of the second point,

wherein said receiver means is in a vicinity of the first point,

wherein the electrical and/or electromagnetic signal transmitted by ~~said~~the transmitter means ~~in the vicinity of the second point~~ is injected into a second dipole comprising ~~firstly~~one of said electrical contact points between ~~said~~the cable and the at least one electrically conductive tubular element, and ~~secondly~~an electrical contact point between the at least one electrically conductive tubular element and ~~said~~the transmitter means ~~in the vicinity of the second point~~,

~~wherein the~~ said second dipole ~~generates~~generating an electromagnetic signal received by a first dipole comprising, ~~firstly~~ an electrical contact point between ~~said~~the cable and ~~said~~the receiver means ~~in the vicinity of the first point~~, and secondly an electrical contact point between the underground formation and ~~said~~the receiver means, ~~and in the vicinity of the first point~~; the electromagnetic signal received by the

~~wherein the~~ first dipole ~~generates~~generating an electrical signal that is conveyed to ~~said~~the receiver means, ~~in the vicinity of the first point~~.

**10 (currently amended)** A transmission device according to claim 1,

further comprising a conductor member anchored in the ground.

wherein said conductor member electrically connects ~~the electrical contact between the formation and~~ ~~said~~the transmitter means and/or ~~said~~ receiver means, in the vicinity of the first point, to the underground formation. ~~takes place via a conductor member anchored in the ground.~~

**11 (currently amended)** A transmission device according to claim 1, wherein ~~said~~the transmitter means and ~~said~~the receiver means ~~for transmitting and receiving an electrical and/or an electromagnetic signal~~ are situated in the vicinity of ~~respective ones of the first point and the second point, respectively~~ points.

**12 (currently amended)** A transmission device according to claim 1, wherein ~~said~~the transmitter means ~~is for transmitting an electrical and/or an electromagnetic signal~~ are situated solely in ~~at~~the vicinity of one of the first point and the second point~~points~~, and ~~said~~the receiver means ~~is for receiving an electrical and/or an electromagnetic signal~~ are situated solely in ~~at~~the vicinity of the other one of the first point and the second point~~points~~.

**13 (currently amended)** An installation for working fluids contained underground, the installation comprising:

a cavity defined in an underground formation extending ~~to~~from the surface of the ground and closed on the surface by a wellhead; ~~said cavity being provided with~~

at least one electrically conductive tubular element provided in said cavity; and  
~~the installation including~~

a transmission device according to claim 1.

**14 (currently amended)** An installation according to claim 13, further  
~~comprising~~including an applicator device for applying an insulating coating on said~~the~~  
cable.

**15 (currently amended)** An installation according to claim 14, ~~in which the wellhead is~~  
~~preceded by an airlock provided with a sealing device for the cable;~~

wherein said~~the~~ applicator device for applying the insulating coating on the cable  
is disposed inside an~~the~~ airlock preceding the wellhead. the airlock including a sealing  
device for said cable, said applicator device being located downstream from the sealing  
device.

**16 (currently amended)** An installation according to claim 14, further  
~~comprising~~including

deployment means for deploying said cable; and

an alignment device for aligning said~~putting the cable into alignment in the~~  
wellhead, said~~the~~ alignment device comprising at least one pulley, each pulley being  
electrically insulated from the wellhead and/or the underground formation,

wherein said~~the~~ applicator device ~~for applying the insulating coating on the cable~~  
is disposed between said~~the~~ deployment means and said~~the~~ alignment device, ~~and~~  
~~wherein the or each pulley is electrically insulated from the wellhead and/or the~~  
~~formation.~~

**17 (new)** A transmission device according to claim 1, wherein said cable has a resistivity  
that is greater than 30 mΩ/m.

**18 (new)** A transmission device according to claim 1, wherein said cable is a slickline  
cable or a “piano wire” cable.